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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,948	06/04/2002	Wolfgang Schmidbauer	WEI0032	2549

7590

08/17/2004

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EXAMINER

HALPERN, MARK

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,948	SCHMIDBAUER ET AL.	
	Examiner	Art Unit	
	Mark Halpern	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- 1) Acknowledgement is made of Amendment received 7/29/2004.

Applicants provide a Substitute Specification, cancel claims 1-20, and offer new claims 21-34, for consideration.

Specification

- 2) Cross-Reference to Related Applications is not recited on page 1 of the Specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 3) Claims 24, 26-34, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 recites the limitation "the stirring crucible" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 24 and 27, recite a "stirring crucible", and claim 26 recites a "stirring vessel". Clarification is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4) Claims 21-23, 25, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tachibana Masakiyo (JP 57 095 834) in view of Lifanov ("A Crucible-Type Induction Furnace for Melting Glass", US Consultants Bureau, vol. 48, no. 7, July 1991, pgs. 288-290). Tachibana discloses an apparatus and a process wherein through inlet 3 starting material glass 9 is introduced into melting chamber 4. Said melting chamber 4 is connected to refining chamber 6 where glass melt 1 flows through a throat 5. The throat 5 connecting the chambers is located at the floor level of both melting chamber 4 and refining chamber 6. The throat 5 of Tachibana reads on the claimed connecting line. The chambers 4 and 6 are surrounded by high frequency voltage applied separately to coils 10A, 10B enclosing a melting container 2 from oscillators 11A, 11B. The high frequency voltage separation of Tachibana reads on the claimed conductive screening caging (in the absence of a definition of conductive screening caging). As shown in the Figure, duct 7 exits downstream from the refining chamber for subsequent processing of the glass melt (Tachibana, Abstract and Figure). Tachibana is silent on the skull crucible being shunted to ground potential in the connection between the refining and the melting vessels.

Lifanov discloses a skull crucible made of metal pipes, wherein said metal pipes are separated from each other by gaps and the pipes are short circuited in the floor zone by a collector that is supplying and discharging a coolant to said metal pipes. It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Tachibana and Lifanov, because such a combination would provide a means for efficient cooling of the crucible pipes of the design of Tachibana.

5) Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tachibana in view of Lifanov, and further in view of Murakami (6,250,111). Tachibana in view of Lifanov, is applied as above for claim 21, Tachibana in view of Lifanov is silent on a stirring vessel being located downstream of the cooling groove. Murakami discloses an apparatus and a process of melting and refining glass where a connector 10 connects melting tank 1 to refining tank 3 through homogenizing tank 4 to mixing tank 5; said mixing tank 5 is equipped with a stirrer 9 for stirring the molten glass (Murakami, col. 4, line 33 to col. 5, line 39 and Figure 2). It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Tachibana and Lifanov with Murakami, because such a combination would keep the molten glass of Tachibana at a uniformed temperature and prevent cords as disclosed by Murakami (col. 4, lines 40-45).

6) Claims 26-34, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tachibana in view of Murakami.

Claims 26, 32: Tachibana discloses an apparatus and a process wherein through inlet 3 starting material glass 9 is introduced into melting chamber 4. Said melting chamber 4 is connected to refining chamber 6 where glass melt 1 flows through a throat 5. The throat 5 connecting the chambers is located at the floor level of both melting chamber 4 and refining chamber 6. The throat 5 of Tachibana reads on the claimed connecting line. The chambers 4 and 6 are surrounded by high frequency voltage applied separately to coils 10A, 10B enclosing a melting container 2 from oscillators 11A, 11B. As shown in the Figure, duct 7 exits downstream from the refining chamber for subsequent processing of the glass melt. The glass is melted in the chambers of Tachibana at temperatures about 1350-1500 °C (Tachibana, Abstract and Figure). It would have been obvious, to one skilled in the art at the time the invention was made, that the temperature range of Tachibana at the high end of the range be construed on the claimed "above 1560 °C" of the present invention. See MPEP 2173.05 (b) regarding the interpretation of the term "about". Tachibana is silent on a stirring vessel being located downstream of the cooling groove. Murakami discloses an apparatus and a process of melting and refining glass where a connector 10 connects melting tank 1 to refining tank 3 through homogenizing tank 4 to mixing tank 5; said mixing tank 5 is equipped with a stirrer 9 for stirring the molten glass (Murakami, col. 4, line 33 to col. 5, line 39 and Figure 2). It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Tachibana with Murakami, because such a

combination would keep the molten glass of Tachibana at a uniformed temperature and prevent cords as disclosed by Murakami (col. 4, lines 40-45).

Claim 27: it would have been obvious, to one skilled in the art at the time the invention was made, that the melt levels of the connector 10 and the mixing tank 5 of Murakami be of the same level as the melt level of the melting and refining tanks of Tachibana, because it would optimize the process flow of the melting glass.

Claim 28: the melting tank of Murakami is made of platinum or platinum alloy (col. 3, lines 15-32).

Claims 29, 31: Tachibana, as per above, discloses heating of the melting and the refining vessel by high frequency voltage.

Claim 30: the connector 10 of Murakami is made of platinum lining (col. 9, lines 20-24).

Claim 33: it would have been obvious to one skilled in the art at the time the invention was made, that the cooling of the melt in the cooling groove be to any temperature range, including the claimed temperature range, depending on the length of the groove, time of cooling and the products made.

Claim 34: it would have been obvious to the artisan that the Tachibana process does not use toxic refining agents since none of the toxic agents are disclosed.

Response to Amendment

- 7) Claims 1-20, rejection under 35 U.S.C. 112, second paragraph, is withdrawn in view of cancelled claims.
- 8) Claims 1-3, 5, 9, 12, 14, 16-18, rejection under 35 U.S.C. 102(b) as being anticipated Tachibana, is withdrawn in view of cancelled claims.
- 9) Claim 15 rejection under 35 U.S.C. 103(a) as being unpatentable over Tachibana, is withdrawn in view of cancelled claims.
- 10) Claims 4, 6-8, 10-11, 19-20, rejection under 35 U.S.C. 103(a) as being unpatentable over Tachibana in view of Murakami, is withdrawn in view of cancelled claims.
- 11) Claim 13 rejection under 35 U.S.C. 103(a) as being unpatentable over Tachibana in view of Lifanov, is withdrawn in view of cancelled claims.
- 12) Applicants' arguments with respect to claims 1-20, have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

- 13) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Halpern whose telephone number is 571-272-1190. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mark Halpern
Patent Examiner
Art Unit 1731